

1           1.    The method comprising:  
2                receiving image data; and  
3                simultaneously determining at least two filters  
4 of different sizes from said data.

1           2.    The method of claim 1 wherein receiving data  
2 includes receiving a matrix of data having rows and  
3 columns, and reducing the number of rows and reducing the  
4 number of columns.

1           3.    The method of claim 2 including adding rows  
2 together and adding columns together.

1           4.    The method of claim 1 including progressively  
2 calculating filters from smaller to larger sizes.

1           5.    The method of claim 4 including receiving image  
2 data values, adding the values together, and multiplying  
3 the values by convolution coefficients.

1           6.    The method of claim 5 including reusing the  
2 results of said additions and multiplications calculated  
3 for one filter size, when calculating a filter of a larger  
4 size.

1           7.    The method of claim 1 including receiving data  
2 values in rows and columns, and adding together data values  
3 along diagonals.

1           8.    The method of claim 1 including calculating at  
2   least two filters for a first pixel among said image data  
3   and then calculating a filter for an adjacent pixel.

1           9.    The method of claim 1 including simultaneously  
2   generating at least three filters of different sizes.

1           10.   The method of claim 1 including successively  
2   calculating filters of progressively larger size.

1           11.   An article comprising a medium storing  
2   instructions that enable a processor-based system to:  
3                receive image data; and  
4                simultaneously determine at least two filters of  
5   different sizes from said data.

1           12.   The article of claim 11 further storing  
2   instructions that enable the processor-based system to  
3   reduce the number of rows of image data and reduce the  
4   number of columns of image data.

1           13.   The article of claim 12 further storing  
2   instructions that enable the processor-based system to add  
3   values associated with rows together and to add values  
4   associated with columns together.

1        14. The article of claim 11 further storing  
2 instructions that enable the processor-based system to  
3 progressively calculate filters from smaller to larger  
4 sizes.

1        15. The article of claim 14 further storing  
2 instructions that enable the processor-based system to  
3 receive image data values, add the values together, and  
4 multiply the values by convolution coefficients.

1        16. The article of claim 15 further storing  
2 instructions enable the processor-based system to reuse the  
3 results of said additions and multiplications calculated  
4 for one filter size, when calculating a filter of a larger  
5 size.

1        17. The article of claim 11 further storing  
2 instructions that enable the processor-based system to  
3 receive data values in rows and columns, and add together  
4 data values along diagonals.

1        18. The article of claim 11 further storing  
2 instructions that enable the processor-based system to  
3 calculate at least two filters for a first pixel among said  
4 image data and then calculate a filter for an adjacent  
5 pixel.

1        19. The article of claim 11 further storing  
2 instructions that enable the processor-based system to  
3 simultaneously generate at least three filters of different  
4 sizes.

1        20. The article of claim 11 further storing  
2 instructions that enable the processor-based system to  
3 successively calculate filters of progressively larger  
4 size.

1        21. The system comprising:  
2            a first set of adders to add together rows and to  
3 add together columns of image data; and  
4            a second set of adders and a first set of  
5 multipliers to calculate at least two different filter  
6 sizes from said image data.

1        22. The system of claim 21 that progressively  
2 calculates filters from smaller to larger sizes.

1        23. The system of claim 22 that utilizes the results  
2 from said second set of adders and first set of multipliers  
3 for one filter size, when calculating a filter of a larger  
4 of a larger size.

1        24. The system of claim 21 including a state machine  
2 that controls the operation of said first and second adders  
3 and said first set of multipliers.

1           25. The system of claim 21 wherein said second set of  
2   adders adds image data along diagonals.